CHAPTER 4.4.

RECOMMENDATIONS FOR SURFACE DISINFECTION OF SALMONID EGGS

Article 4.4.1.

Introduction

The practice of disinfecting salmonid *eggs* at hatcheries is an essential part of ensuring that ~~endemic~~ ~~*diseases*~~ *pathogenic agents* are not transferred between incubators and between facilities and forms a part of routine hatchery hygiene protocols. The *disinfection* process is also important for international trade in ~~when trading~~ salmonid *eggs* between countries*, zones* or *compartments* ~~*compartments*, *zones* or countries~~ to prevent the transfer of some *pathogenic agents*. Although generally effective for *disinfection* of the *egg* surface and reproductive fluids, the use of *disinfectants* will not prevent vertical transmission.

Salmonid *eggs* may be disinfected with a number of chemical agents. However, the most common method used is *disinfection* with the iodine-based product, povidine-iodine.

Iodophores, commonly povidone-iodine solutions, have the advantage of providing a neutral pH, being non-irritant and are relatively non-toxic. The neutral pH is important for minimising toxicity and ensuring efficacy. It is recommended to follow manufacturer's instructions to identify circumstances where pH may be a concern. If other iodine-based agents are used for *disinfection* it is essential that they be adequately buffered.

Article 4.4.2.

Disinfection protocol for salmonid eggs

This *disinfection* protocol may be applied to newly fertilised or eyed salmonid *eggs*. However newly fertilised *eggs* should be allowed to commence hardening prior to undergoing the *disinfection* protocol. Although there is a considerable margin of safety for hardened *eggs*, the *disinfection* protocol is not recommended for unfertilised ova or during fertilisation. It is essential that the pH of the iodophore solution is maintained between 6 and 8.

To disinfect salmonid *eggs* the following protocol should be applied:

1) rinse~~d~~ in pathogen free 0.9% to 1.1% ~~pathogen free~~ saline (30–60 seconds) to remove organic matter; then

2) immerse~~d~~ in ~~a~~ an iodophore solution containing 100 ppm available iodine for a minimum of 10 minutes. The iodophore ~~solution~~ concentration should be monitored to ensure effective levels are maintained ~~used only once~~. The ratio of *eggs* to iodophore solution should be a minimum of 1:4; then

3) rinse~~d~~ again in pathogen-free 0.9% to 1.1% ~~pathogen free~~ saline for 30–60 seconds; then

4) ~~held~~ hold in pathogen-free water.

All rinsing and *disinfection* solutions should be prepared using pathogen free water. Iodophore solutions may be buffered using sodium bicarbonate ($NaHCO_3$) if the pH is low.